DD/A 73-0684

OJCS 231-75

MEMORANDUM FOR: Director of Central Intelligence

SUBJECT : Request for Additional Funds to Upgrade the Agency's Computer Systems and Supporting Utilities

1. Action Requested: The Office of Joint Computer Support (OJCS) has reached a critical period in its planning for centralized computer facilities. It is clear that the continuing growth in computer requirements cannot be adequately met without immediate action in the following areas:

a. an expansion of the computing capacity of OJCS by installing additional equipment incorporating the latest technology,

b. the preparation of additional space for installation of computers, and

c. increasing central utilities (electrical power and environmental systems) that support OJCS computers and equipment in the Office of Communications, Office of ELINT and elsewhere.

Additional funds of $1.9 million in FY 1975 and $2.7 million in FY 1976 are requested for this purpose.

2. Background: During FY 1974, OJCS studied computer requirements and prepared a Computer Systems Planning Report, dated June 1974. This Plan provided for increased capacity, improved reliability, and more efficient software and equipment during the period FY-74 through FY-78. The essence of the Plan was the replacement of the then-installed 360 model computers with IBM 370/168 equipment over a period of several years beginning with the installation of the first 168 system in July 1975.

OJCS has not been able to proceed with this Plan because supplemental funds requested for FY-75 and FY-76 were not approved. While needed action cannot be taken because of the lack of funds, computer requirements continue to grow. To highlight a few of these:

a. The COMIREX computer program for overhead reconnaissance systems is being improved for the management of current requirements and, an Accounting and Management System is being developed for a new overhead reconnaissance system.

b. The Generalized Information Management (GIM) System has grown from four to seventeen large user data bases in one year. This system processes data for the budget, financial reports, personnel staffing, security case processing, medical records, logistics inventory control, contract information, imagery analysis, locator information, and missile events. Use of the GIM System has resulted in the establishment of five Data Access Centers and additional computer terminals in user offices.

c. The current interactive computer system allows users in 36 offices to process data by communicating directly with a computer through 200 remote terminals. During the past year the total hours of connect time (length of time a terminal is in use) has increased from 78,000 hours during CY 1973 to 101,000 hours during CY 1974. With the limitation in computer capacity, this increased use impacts adversely on the timeliness of the computer's response to the users' input and output operations. Performance degrades rapidly as the number of active users on the system exceeds 65, a situation which is occurring with increasing frequency.

d. Support for the Central Reference Service has more than doubled since October 1973, when the dedicated CRS computer was removed and OJCS absorbed that Office's workload. We expect continuing increase in CRS workloads until such time as SAFE becomes a fully operational system. SAFE computer equipment is not included in the OJCS Computer System Plan at this time.

e. OJCS computer support to the Office of Research and Development has quadrupled since June 1974 when that Office's computer was removed.

f. On-going external investigations of the Agency's operations will very likely result in recommendations for major changes in the Agency's records and file systems. Although OJCS has no way of estimating workloads required for such systems, we believe they will have a major impact on the Agency's computer resources.

To cope with the continuing growth of requirements and to take full advantage of the most cost/effective financial arrangements, the OJCS Computer System Plan has been revised. Basically the revised Plan calls for purchase of the 360/195 system because of the long-term economics that can be realized if this equipment is purchased prior to June 1975. In addition, it calls for long-term leasing of the Agency's newer equipment and the orderly replacement of the other computers with four 370/168's over a period of three years. These steps will enable us to keep pace with growing requirements, provide improved backup, make better use of space, employ more efficient computer technology, and realize cost savings in meeting ADP requirements. The attachment provides additional detail from the revised Plan showing the workload growth plotted against system capacity, the principle steps involved, the utility and ADP costs.

3. Staff Position: This Directorate considers it essential to move ahead with the needed changes and growth in the Agency's computer facilities. Present computer resources provide no redundancy for back-up operations when computers become inoperative and little flexibility and capacity for additional workloads. The alternatives are to let the lack of capability filter out requirements, or establish an Agency ADP priorities system. I believe that neither of these are acceptable approaches. Without the funds requested in this memorandum, we cannot expect to meet projected Agency computer requirements. In addition, an investment for increased power is required for OJCS computers and other demands on our power resources which are growing from special equipment installations in OC, OEL, and elsewhere.

4. Recommendation: I recommend that additional FY 1975 and FY 1976 funds be approved for the following:

FY 1975 Funds:

Site preparation - 3000 sq. ft. additional space	$ 819,000
Additional 2500 KW generator	750,000
New 400 HZ uninterruptible power source	200,000
Total unfunded requirement FY 1975	$1,769,000

FY 1976 Funds:

Additional 60 Hz uninterruptible power source	$ 500,000
Enhancement of water chiller to 700 tons	175,000
ADP equipment as per Plan	1,970,000
Total FY 1976 commitment	$2,645,000

John F. Blake
Deputy Director
for
Administration

Attachment: Summary of Plan

APPROVED: _____ _____

DISAPPROVED: _____ _____

Distribution:
Orig - adse (for return to OJCS via DD/A)
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ORIGINATOR:

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Director of Joint Computer Support Date

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O/D/OJCS [ ] (10 Feb 75) STAT

Summary of OJCS Computer System Plan

January 1975

Summary of OJCS Computer System Plan

January 1975

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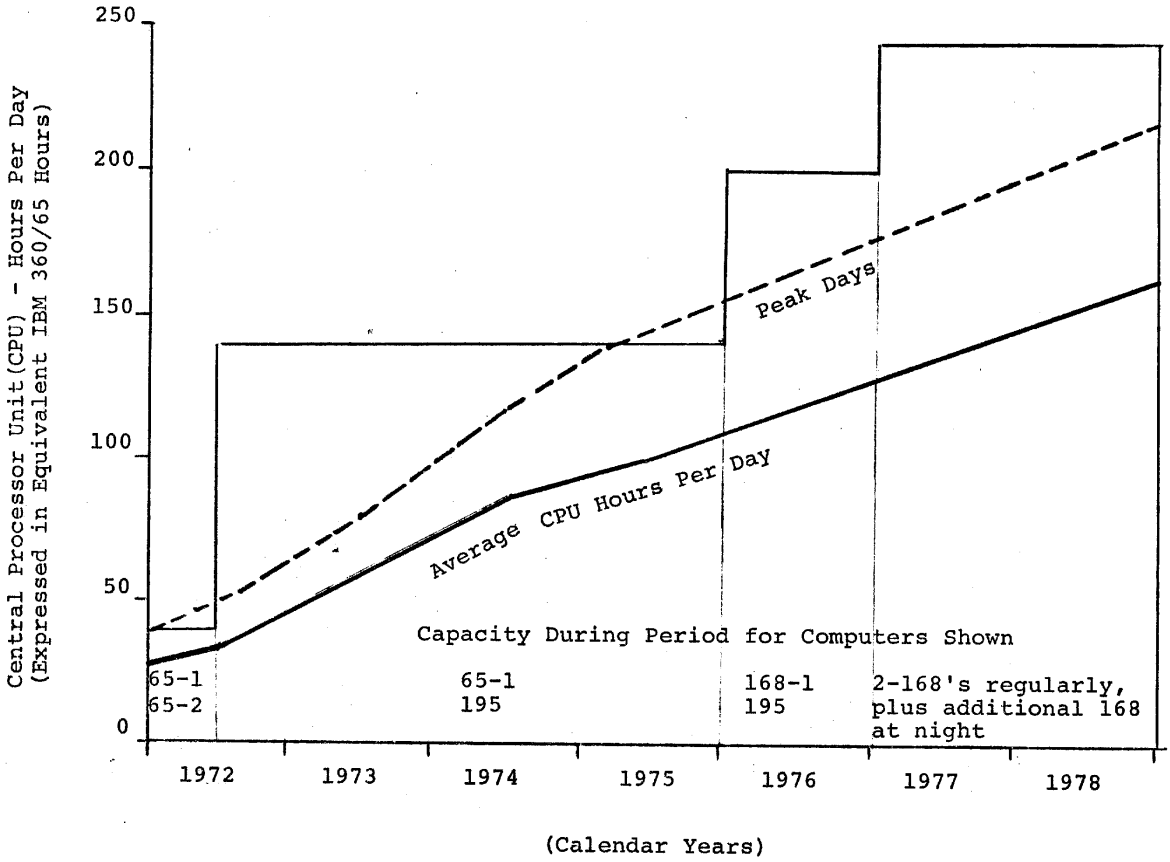
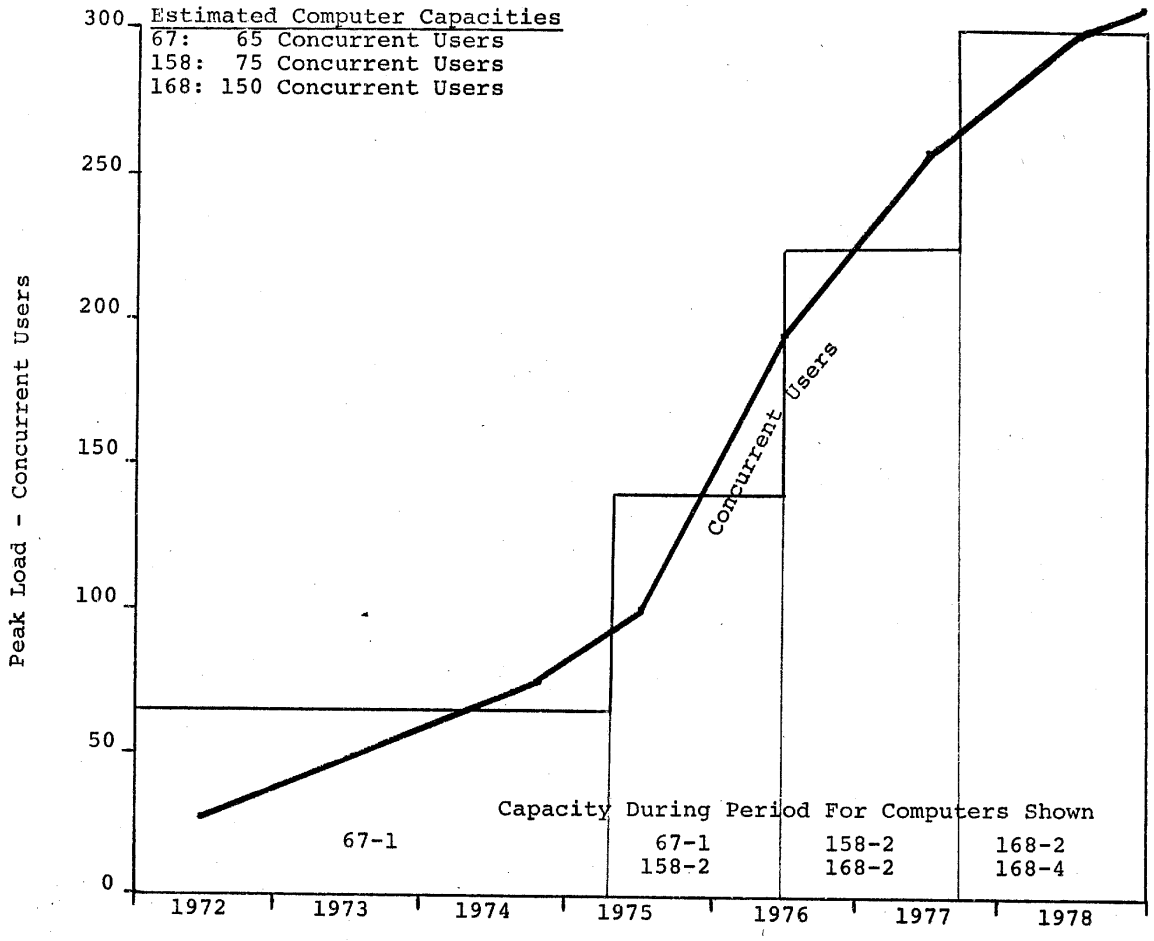
OJCS

Batch Workload and Capacity



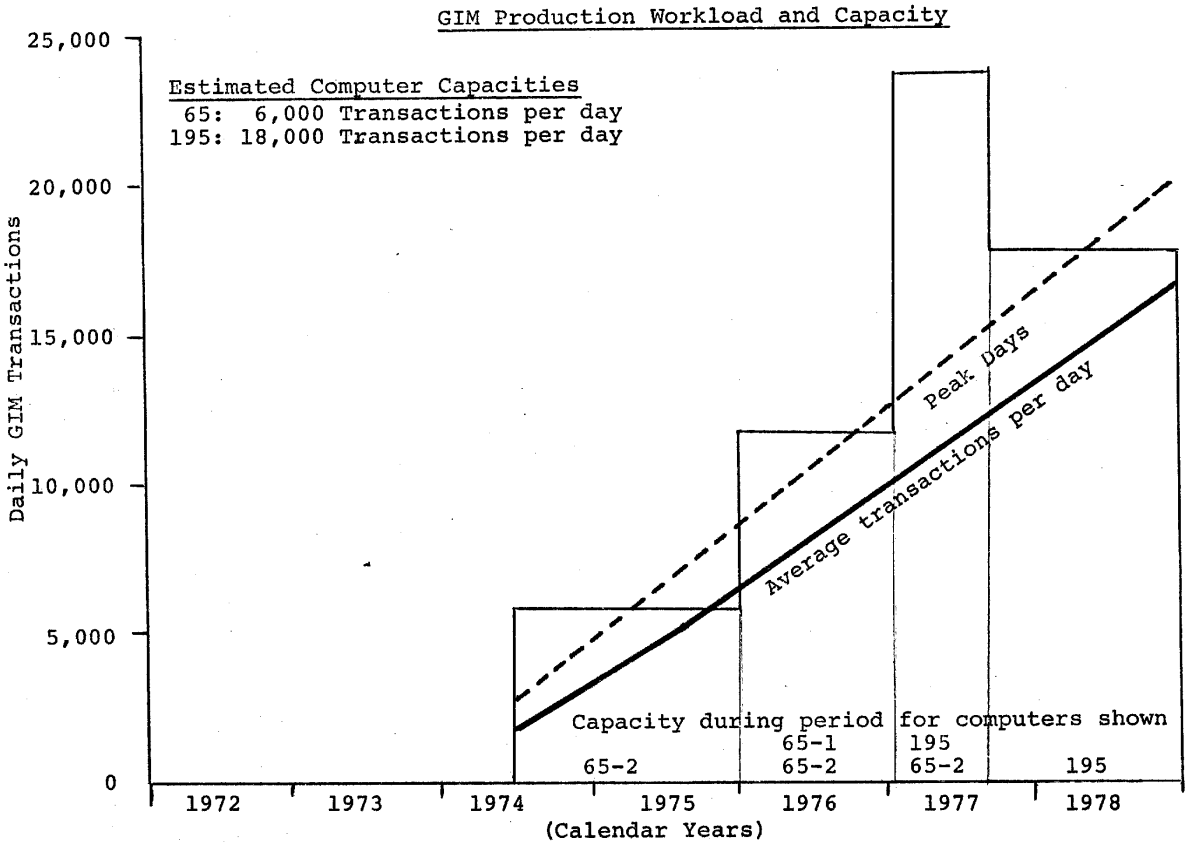
OJCS

General Purpose Time Sharing Workload and Capacity



OJCS

GIM Production Workload and Capacity



OUTLINE OF OJCS COMPUTER SYSTEM PLAN - JANUARY 1975

Milestone No.	Date	Action	Comment	APPLICATION OF COMPUTERS			
				Batch	GIM	General Purpose Timesharing	Special Purpose Online
1.	Mar 75	Purchase IBM 360/195 System	It is advantageous to purchase this system because increased rental credits can be used to reduce the purchase price, it is a powerful system that can be operated compatibly with 370 systems, it has a useful life through FY-80, annual costs for maintenance after purchase are slightly more than $200,000, purchase and maintenance costs over two years are equal to rental for the same period.	-	-	-	-
2.	July 75	Install ORACLE Mass Storage System on first floor	Equipment space and utilities for ORACLE have been completed.	-	-	-	-
3.	July 75	Increase memory on 158-1 from from 2 to 3 million bytes	This is necessary to handle the increased workload for CRS applications.	-	-	-	-
4.	July 75	Begin testing of ORACLE	This milestone starts a one-year preparation for production. Initial testing will test functions and system specs. Later, tests for certain application programs will be conducted. Finally, parallel tests for regular production jobs will be conducted.	-	-	-	-
5.	Jan 76	Install 168-1 (4 million bytes of memory) on ground floor	168-1 will be used with the 195 for batch processing, and it will also be for special purpose on-line applications. Two systems will become available: the 65-1 from batch and the 158-1 from special purpose applications.	168-1 195 * 65-1	65-2	67-1 158-2	*158-1

*Systems in transition to another service or function

Milestone No.	Date	Action	Comment	APPLICATION OF COMPUTERS			
				Batch	GIM	General Purpose Timesharing	Special Purpose Online
6.	Feb 76	Switch 65-1 to GIM	A one-month period has been allowed to complete the distribution of GIM applications between two systems: 65-2 which is currently supporting GIM and 65-1 which became available from the installation of 168-1.	168-1 195-1	65-2 65-1	67-1 158-2	*158-1
7.	Jun 76	Complete preparation of 3000 square feet of computer space on first floor and utilities for balance of Computer System Plan (OL responsibility)	OL has completed general specifications and cost estimates for this work. Relocation plans, additional funding, engineering specifications, and GSA negotiations are essential to completion of this milestone.	-	-	-	-
8.	July 76	Install 168-2 (4 million bytes of memory) on first floor	The 168-2 will be used as a replacement for the 67-1 which (together with 158-2) has been supporting general purpose time-sharing applications. This move will permit the phasing out of System/360 software required with the 67 computer and standardization with System/370 software on both the 158-2 and 168-2.	168-1 195	65-2 65-1	168-2 158-2 * 67-1	*158-1
9.	July 76	Release 158-1	A six-month period is allowed to complete a smooth transition of CRS and other special purpose on-line applications from 158-1 to 168-1. The 168-1 is also concurrently supporting batch services.	168-1 195	65-2 65-1	168-2 158-2 * 67-1	168-1
10.	July 76	Release or reutilize 67-1	The 67-1, an Agency-owned system, may be applied to a stand-alone application requirement, transferred to another Agency, or stored for future use. Continued cost, if retained, would be $44K per year for maintenance.	168-1 195	65-2 65-1	168-2 158-2	168-1

Milestone No.	Date	Action	Comment	APPLICATION OF COMPUTERS			
				Batch	GIM	General Purpose Timesharing	Special Purpose Online
12.	Jan 77	Install 168-3 (4 million bytes of memory - Multi processor) on first floor	The 168-3 will replace the 195 for batch processing. The batch system will consist of the 168-3 and 168-1 The 168-2 (general purpose timesharing support) will also be equipped with multi-processing hardware. At night, this computer will be taken out of timesharing service and used with the 168-3 to test multi-processing with System/370 operating system software.	168-3 168-1 *195	65-2 65-1	168-2 158-2	168-1
13.	Feb 77	Transfer GIM production from 65-1 and 65-2 to the 195	The 195 will replace the 65-1 and 65-2 and provide increased capacity for GIM production.	168-3 168-1	195 * 65-1 * 65-2	168-2 158-2	168-1
14.	Mar 77	Release or reutilize 65-1	The 65-1, an Agency-owned system, may be applied to a stand-alone application requirement, transferred to another Agency, or stored for future use. Continued cost, if retained, would be $34K per year maintenance.	168-3 168-1	195 * 65-2	168-2 158-2	168-1
15.	Oct 77	Install 168-4 (4 million bytes of memory) on ground floor	The 168-4 will replace the 158-2 which (together with the 168-2) has been supporting general purpose timesharing applications.	168-3 168-1	195 * 65-2	168-4 168-2 *158-2	168-1
16.	Oct 77	Release or reutilize 65-2	By this date the 195 will be handling all GIM production. The 65-2, an Agency-owned system may be applied to a stand-alone application requirement, transferred to another Agency, or stored for future use. Continued cost, if retained, would be $59K per year maintenance.	168-3 168-1	195	168-4 168-2 *158-2	168-1

Milestone No.	Date	Action	Comment	APPLICATION OF COMPUTERS			
				Batch	GIM	General Purpose Timesharing	Special Purpose Online
17.	Nov 77	Release the 158-2	One month has been allowed to complete transfer of work from 158-2 to 168-4. At this point, 168-2 and 168-4 will be supporting general purpose timesharing applications.	168-3 168-1	195	168-4 168-2	168-1
18.	Nov 77	Exchange workloads on 168-1 and 168-2	The purpose of this step is to consolidate batch work on the two multiprocessor systems, 168-2 and 168-3.	168-3 168-2	195	168-4 168-1	168-2
19.	Jan 78	Begin Multi-processor batch production with 168-2 and 168-3					

January 30, 1975

Estimated Cost for Preparing Additional Computer Space and Increasing Central Utilities

Description	FY-1975	Unfunded FY-1976
Site preparation - 3000 square feet	$ 819,000	
Additional 2500 KW generator	750,000	
New 400 Hz uninterruptible power source	200,000	
Additional 60 Hz uninterruptible power source		$ 500,000
Enhancement of water chiller to 700 tons		175,000
	$1,769,000	$ 675,000